Abstract

Introduction

Consumption of herbal flavonoids instead of chemical drugs has increased in recent years due to fewer side effects as well as being affordable.

Objective

In this study, the effect of Luteolin on Inflammation induced by lipopolysaccharide was investigated in male rats by measurement of the proinflammatory factors of IL-1β and TNF-α.

Method

90 male Wistar rats weighing 180-200 grams were chosen and divided into control, Sham (solvent), positive control (Dexamethasone 15 mg / kg. ip), groups and three experimental groups which received doses of 5, 15 and 30 mg / kg of Luteolin intraperitoneally.

Half an hour after injecting one of these compounds, Lipopolysaccharide (30 µg / kg. ip) was injected. Then at time intervals of 4, 12 and 24 hours, the rats were anesthetized and blood samples were taken. Serum of samples were separated by centrifuge and was transferred to the micro-tubes and stored at-80 ° C. Measurement of IL-1β and TNF-α was conducted by the ELISA method. Data were analyzed using SPSS software.

Results

Pre-injection with Luteolin in all used doses (5, 15 and 30 mg / kg) caused reduction of IL-1β at 4 and 12 hours after the LPS injection as well as TNF-α serum at 12 and 24 hour intervals after LPS injection compared to the control group. The IL-1β and TNF-α were significantly decreased by Dexamethasone injection in all three time intervals compared with the control.

Conclusion

Luteolin causes significant reduction of IL-1β and TNF-α serum in acute inflammation induction. This impact is close to dexamethasone effect as an anti-inflammatory steroid drug.

Key words: Inflammation, Luteolin, Dexamethasone, IL-1β, TNF-α